

PCT/CH2004/000535
Inventor: **Robert WEINMANN**
Attorney Docket No. **08388.0011**

**TRANSLATION OF THE ANNEXES TO THE
PRELIMINARY EXAMINATION REPORT
(ARTICLE 34 AMENDMENTS)**

**Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

Sir:


REQUEST FOR SUBSTITUTION OF REPLACEMENT SHEETS

Please substitute the attached replacement sheets 15-17 of the claims containing the translation of the Article 34 Amendments for sheets 15-17 of the claims in the enclosed translation of the as-filed PCT application. It is respectfully requested that the claims in the replacement sheets be examined during examination of the patent application. Claims 1-15 are currently pending.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: March 9, 2006

By: 
Ernest F. Chapman
Reg. No. 25,961

EFC/FPD/sci

AP20 Rec'd PCT/PTO 09 MAR 2006

AMENDED CLAIMS

[received by the International Office on January 17, 2005 (1/17/05);
original claims 1 and 15 amended;
all other claims remain unchanged (3 pages)]

Claims

1. An injection unit which, with a drive unit as well as a drive block disposed in the rear section, is moveable on runners (6) of the machine frame (7) of an injection molding machine and comprises a drive unit (10, 23) for axially displacing and pressing the plasticizing cylinder (2) to the injection mold,

characterized in that

the injection unit (1) is supported in an articulated manner by a support (5) which is moveable on runners of the frame (7) of the injection molding machine and comprises an individual drive (10, 23) for pressing the plasticizing cylinder (2), with slight pivotability of the nozzle tip, to the injection mold (14) while achieving a centric sealing connection, and the rear section of the drive block is adjustably supported.

2. The injection unit according to Claim 1,

characterized in that

the support (5) is formed as a running gear (40) with an undercarriage (22) preferably comprising four guide shoes (8, 8').

3. The injection unit according to Claim 1 or 2,

characterized in that

the support (5) has two lateral support cheeks (44, 45), which provide the plasticizing cylinder (2) with articulated support via rotary pins (9).

4. The injection unit according to one of Claims 1 to 3,

characterized in that

the support (5) features a downward-facing fish joint (12) with a joint (11) for a drive axis (13).

5. The injection unit according to one of Claims 1 to 4,

characterized in that

the active axis of the fish joint connection (12) is disposed at the center of the machine (M-M) and in parallel to the axis of the plasticizing cylinder (2).

6. The injection unit according to Claim 5,
characterized in that
the active axis is preferably disposed at approximately the frame level, especially below the level of the runners (6).

7. The injection unit according to one of Claims 1 to 6,
characterized in that
the individual drive has an electric motor (10), especially a servo motor, as well as a spindle overdrive (23).

8. The injection unit according to one of Claims 1 to 7,
characterized in that
the support (5) in the region between the upper rotary pins (9) and the lower joint (11) and the running gear (40) is rigidly formed, with deformation under stress being close to zero.

9. The injection unit according to one of Claims 1 to 8,
characterized in that
the guide shoes (8, 8') are designed as spherical rotary spindles, the horizontal spacing with respect to the tension-stressed guide shoes (8, 8') being greater than the corresponding spacing of the pressure-stressed guide shoes (8, 8'), to offset the K factor with regard to tension and pressure balancing.

10. The injection unit according to one of Claims 1 to 9,
characterized in that
the injection unit (1) includes a drive unit (4) for the rotational and axial movement of the plasticizing worm (3), said drive unit being supported by the support (5) as well as an additional guide shoe unit (15) on the frame, wherein the plasticizing cylinder (2) is firmly connected to the drive unit (4).

11. The injection unit according to one of Claims 1 to 10,
characterized in that
the additional guide shoe unit (15) has a lower drive bridge, on which the drive unit (4) is supported, said support being provided by a central support (25).

12. The injection unit according to Claim 11,

characterized in that

the additional guide shoe unit (15) has an adjustment device for both vertical and horizontal adjustment.

13. The injection unit according to one of Claims 1 to 12,

characterized in that

the support (5) and running gear (40) are disposed in the front section and the other guide shoe unit (15) in the rear section of the injection unit (1), the running gear (40) having four guide shoes and the guide shoe unit (8, 8') having two guide shoes.

14. The injection unit according to one of Claims 1 to 13,

characterized in that

the rotary pins (9) are at least approximately disposed in a shared horizontal plane with the axis of the plasticizing cylinder (2), in such a manner that during adjustment of the plasticizing cylinder tip (16) a pivoting movement can be completed in both a horizontal and a vertical plane.

15. Method for the adjustment of an injection unit (1), a drive block disposed in the rear section, which is moveable on runners (6) of the machine frame of an injection molding machine with the aid of a running gear (40) and comprises a drive unit for axially displacing and pressing the plasticizing cylinder (2) to the injection mold (14),

characterized in that

when there is an insufficient concentric sealing connection, the plasticizing cylinder tip (16) is adjusted to the injection mold port (17) by means of adjustment of the drive block and corresponding slight rotational movement of the entire injection molding unit (1) in both a vertical and horizontal plane prior to production.